

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A liquid crystal display having liquid crystal sandwiched between a pair of substrates having electrodes for driving the liquid crystal based on respective R, G, and B signals to control transmittance of each of the R, G, and B light components for color display, wherein

each of upper limit values of ranges for driving voltages respectively for R display, G display, and B display applied to the liquid crystal is set independently for R light, G light, and B light, without a control voltage applied to the substrates to control the intensity of R, G, and B light simultaneously,

an upper limit value for a range of values usable within an entire duration of display as driving voltages for respective R, G, and B light components is set independently for each of R, G, and B light components, and

among said independently set upper limit values for respective R, G, and B light components, an upper limit value for at least one of the colors differs from the upper limit values for the other colors,

a display portion having a plurality of pixels in a matrix form, and
a driver circuit for said display portion which supplies a driving voltage signal corresponding to display content to a corresponding one of said pixels in said display portion, wherein

said electrode for driving said liquid crystal provided on a first substrate among said pair of substrates is a pixel electrode of a matrix form which is individually formed for each of said pixels and is connected to a thin film transistor, and

said driver circuit for the said display portion comprises a maximum transmittance voltage limiter which limits an absolute value of a maximum transmittance of liquid crystal of said driving voltage signal which exists for each of R, G, and B to a voltage determined according to a transmittance characteristic of each of R, G, and B, and said driving voltage signal in which the maximum transmittance voltage level is limited is supplied to a corresponding one of said pixels of said display portion through said thin film transistor.

2. (Cancelled).

3. (Previously Presented): A liquid crystal display according to claim 1, wherein

a liquid crystal control driving signal for R light, a liquid crystal control driving signal for G light, and a liquid crystal control driving signal for B light are separately subjected to gamma correction based on transmittance characteristics of the R, G, and B light components.

4. (Original): A liquid crystal display according to claim 1, wherein the pair of substrates includes a first substrate,

electrodes for driving the liquid crystal formed on the first substrate include a plurality of pixel electrodes arranged in matrix thereon; and

the plurality of pixel electrodes are connected to corresponding poly-Si thin film transistors each using a poly-Si layer formed at a low temperature for an active layer.

5. (Currently Amended): An electrically controlled birefringence type liquid crystal display having liquid crystal sandwiched between a pair of substrates having electrodes for driving the liquid crystal based on a liquid crystal control

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driving signal for R light, a liquid crystal control driving signal for G light, and a liquid crystal control driving signal for B light to control transmittance of each of the R, G, and B light components for color display, wherein

each of upper limit values of ranges for driving voltages respectively for R display, G display, and B display applied to the liquid crystal is set independently for R light, G light, and B light, without a control voltage applied to the substrates to control the intensity of R, G, and B light simultaneously,

an upper limit value for a range of values usable within an entire duration of the display as driving voltages for respective R, G, and B light components is set independently for each of R, G, and B light components, and

among said independently set upper limit values for respective R, G, and B light components, an upper limit value for at least one of the colors differs from the upper limit values for the other colors,

a display portion having a plurality of pixels in a matrix form, and
a driver circuit for said display portion which supplies a driving voltage signal corresponding to display content to a corresponding one of said pixels in said display portion, wherein

said electrode for driving said liquid crystal provider on a first substrate among said pair of substrates is a pixel electrode of a matrix form which is individually formed for each of said pixels and is connected to a thin film transistor, and

said driver circuit for the said display portion comprises a maximum transmittance voltage limiter which limits an absolute value of a maximum transmittance of liquid crystal of said driving voltage signal which exists for each of R, G, and B to a voltage determined according to a transmittance characteristic of each of R, G, and B, and said driving voltage signal in which the maximum

transmittance voltage level is limited is supplied to a corresponding one of said pixels of said display portion through said thin film transistor.

6. (Cancelled).

7. (Previously Presented): A liquid crystal display according to claim 5, wherein

the liquid crystal control driving signal for R light, the liquid crystal control driving signal for G light, and the liquid crystal control driving signal for B light are separately subjected to gamma correction based on transmittance characteristics of the R, G, and B light components.

8. (Original): A liquid crystal display according to claim 5, wherein
the pair of substrates includes a first substrate,
electrodes for driving the liquid crystal formed on the first substrate
include a plurality of pixel electrodes arranged in matrix thereon; and
the plurality of pixel electrodes are connected to corresponding poly-Si
thin film transistors each using a poly-Si layer formed at a low temperature for an
active layer.

9. (Previously Presented): A liquid crystal display of claim 1, wherein
each of said upper limit values of ranges for the driving voltages applied to the
liquid crystal is set based on the transmittance characteristic of each of R, G, and B
light components.

10. (Currently Amended): A liquid crystal display having liquid crystal
sandwiched between a pair of substrates having electrodes for driving the liquid

crystal based on respective R, G, and B signals to control transmittance of each of the R, G, and B light components for color display, wherein

each of upper limit values of ranges for driving voltages for application to the liquid crystal is set independently for each of R, G, and B light, without a control voltage applied to the substrates to control the intensity of R, G, and B light simultaneously,

the maximum difference among the set voltages stays within 20%,

an upper limit value for a range of values usable within an entire duration of the display as driving voltages for respective R, G, and B light components is set independently for each of R, G, and B light components, and

among said independently set upper limit values for respective R, G, and B light components, an upper limit value for at least one of the colors differs from the upper limit values for the other colors,

a display portion having a plurality of pixels in a matrix form, and

a driver circuit for said display portion which supplies a driving voltage signal corresponding to display content to a corresponding one of said pixels in said display portion, wherein

said electrode for driving said liquid crystal provider on a first substrate among said pair of substrates is a pixel electrode of a matrix form which is individually formed for each of said pixels and is connected to a thin film transistor, and

said driver circuit for the said display portion comprises a maximum transmittance voltage limiter which limits an absolute value of a maximum transmittance of liquid crystal of said driving voltage signal which exists for each of R, G, and B to a voltage determined according to a transmittance characteristic of each of R, G, and B, and said driving voltage signal in which the maximum

transmittance voltage level is limited is supplied to a corresponding one of said pixels of said display portion through said thin film transistor.

11. (Currently Amended): A liquid crystal display having liquid crystal sandwiched between a pair of substrates having electrodes for driving the liquid crystal, and which shows non-transmittance to the light when no voltage is applied, for applying driving voltages to the liquid crystal based on each of R, G, and B signals to control transmittance of each of the R, G, and B light components for color display, wherein

each of upper limit values for defining the maximum light transmittance of the liquid crystal, of ranges of driving voltages applied to said liquid crystal, is set independently for each of R, G, and B light, without a control voltage applied to the substrates to control the intensity of R, G, and B light simultaneously,

an upper limit value for a range of values usable within an entire duration of the display as driving voltages for respective R, G, and B light components is set independently for each of R, G, and B light components, and

among said independently set upper limit values for respective R, G, and B light components, an upper limit value for at least one of the colors differs from the upper limit values for the other colors,

a display portion having a plurality of pixels in a matrix form, and
a driver circuit for said display portion which supplies a driving voltage signal corresponding to display content to a corresponding one of said pixels in said display portion, wherein

said electrode for driving said liquid crystal provider on a first substrate among said pair of substrates is a pixel electrode of a matrix form which

is individually formed for each of said pixels and is connected to a thin film transistor, and

said driver circuit for the said display portion comprises a maximum transmittance voltage limiter which limits an absolute value of a maximum transmittance of liquid crystal of said driving voltage signal which exists for each of R, G, and B to a voltage determined according to a transmittance characteristic of each of R, G, and B, and said driving voltage signal in which the maximum transmittance voltage level is limited is supplied to a corresponding one of said pixels of said display portion through said thin film transistor.

12. (Previously Presented): The liquid crystal display of claim 11, wherein the maximum difference among said set upper limits of ranges of driving voltages applied to the liquid crystal for each of R, G, and B light never exceeds 20%.

13. (Currently Amended): A liquid crystal display, wherein liquid crystal is sandwiched between a pair of substrates, individual pixel electrodes are formed for each pixel on one of said substrates,

R, G, and B driving signals corresponding to each of said pixel electrodes are applied for driving the liquid crystal by the potential difference between said pixel electrodes and opposing electrodes formed on the other substrate, to control the transmittance of each of the R, G, and B light components for color display, and

each of upper limit values of ranges for driving voltages respectively for said R, G, and B driving signals applied to said pixel electrodes is set

independently for R, G, and B light, without a control voltage applied to the substrates to control the intensity of R, G, and B light simultaneously,

an upper limit value for a range of values usable within an entire duration of the display as driving voltages for respective R, G, and B light components is set independently for each of R, G, and B light components, and

among said independently set upper limit values for respective R, G, and B light components, an upper limit value for at least one of the colors differs from the upper limit values for the other colors,

a display portion having a plurality of pixels in a matrix form, and
a driver circuit for said display portion which supplies a driving voltage signal corresponding to display content to a corresponding one of said pixels in said display portion, wherein

said electrode for driving said liquid crystal provider on a first substrate among said pair of substrates is a pixel electrode of a matrix form which is individually formed for each of said pixels and is connected to a thin film transistor, and

said driver circuit for the said display portion comprises a maximum transmittance voltage limiter which limits an absolute value of a maximum transmittance of liquid crystal of said driving voltage signal which exists for each of R, G, and B to a voltage determined according to a transmittance characteristic of each of R, G, and B, and said driving voltage signal in which the maximum transmittance voltage level is limited is supplied to a corresponding one of said pixels of said display portion through said thin film transistor.

14. (Previously Presented): The liquid crystal display of claim 13, wherein the maximum difference among said set upper limits of ranges of driving voltages for each of R, G, and B light never exceeds 20%.

15. (Previously Presented): The liquid crystal display of claim 13, wherein the maximum light transmittance is defined by said upper limit values of ranges of said driving voltages.

16. (Currently Amended): A reflective type liquid crystal display having liquid crystal sandwiched between a pair of substrates, a reflection electrode formed on one of said pair of substrates, for driving the liquid crystal by the potential difference between said reflection electrode and a transparent electrode formed on the other substrate, to reflect the incident light from said transparent electrode side at said reflective electrode and to control the amount of light of each of the R, G, and B light components re-emitted from said transparent electrode for color display, wherein

each of upper limit values of ranges for driving voltages for R display, G display, and B display applied to said liquid crystal by said transparent electrode and said reflection electrode is set independently for R, G, and B light, without a control voltage applied to the substrates to control the intensity of R, G, and B light simultaneously,

an upper limit value for a range of values usable within an entire duration of the display as driving voltages for respective R, G, and B light components is set independently for each of R, G, and B light components, and

among said independently set upper limit values for respective R, G, and B light components, an upper limit value for at least one of the colors differs from the upper limit values for the other colors,

a display portion having a plurality of pixels in a matrix form, and
a driver circuit for said display portion which supplies a driving voltage signal corresponding to display content to a corresponding one of said pixels in said display portion, wherein

said electrode for driving said liquid crystal provider on a first substrate among said pair of substrates is a pixel electrode of a matrix form which is individually formed for each of said pixels and is connected to a thin film transistor, and

said driver circuit for the said display portion comprises a maximum transmittance voltage limiter which limits an absolute value of a maximum transmittance of liquid crystal of said driving voltage signal which exists for each of R, G, and B to a voltage determined according to a transmittance characteristic of each of R, G, and B, and said driving voltage signal in which the maximum transmittance voltage level is limited is supplied to a corresponding one of said pixels of said display portion through said thin film transistor.

17. (Previously Presented): The reflective type liquid crystal display of claim 16, wherein

said reflection electrode is a pixel electrode formed individually for each pixel, and

each of the upper limit values of ranges for driving voltages of said R, G, and B driving signals applied to respective pixel electrode is set independently for R, G, and B light.

18. (Currently Amended): A liquid crystal display having a liquid crystal display panel configured by sandwiching liquid crystal between a pair of substrates, wherein:

a plurality of pixels are provided within said liquid crystal display panel, each of said plurality of pixels being separately assigned to one of R, G, and B colors;

individual pixel electrodes are formed for each of said plurality of pixels on one of said pair of substrates;

R, G, and B driving signals corresponding to each of said pixel electrodes are applied for driving the liquid crystal by the potential difference between said pixel electrodes and an opposing common electrode formed on the other substrate, to control the transmittance of each of the R, G, and B light components for colored display;

each of upper limit values of ranges for driving voltages respectively for said R, G, and B driving signals applied to said pixel electrodes is set independently for R, G, and B, light,

an upper limit value for a range of values usable within an entire duration of the display as driving voltages for respective R, G, and B light components is set independently for each of R, G, and B light components, and

among said independently set upper limit values for respective R, G, and B light components, an upper limit value for at least one of the colors differs from the upper limit values for the other colors,

a display portion having a plurality of pixels in a matrix form, and
a driver circuit for said display portion which supplies a driving voltage signal corresponding to display content to a corresponding one of said pixels in said display portion, wherein

said electrode for driving said liquid crystal provider on a first substrate among said pair of substrates is a pixel electrode of a matrix form which is individually formed for each of said pixels and is connected to a thin film transistor, and

said driver circuit for the said display portion comprises a maximum transmittance voltage limiter which limits an absolute value of a maximum

transmittance of liquid crystal of said driving voltage signal which exists for each of R, G, and B to a voltage determined according to a transmittance characteristic of each of R, G, and B, and said driving voltage signal in which the maximum transmittance voltage level is limited is supplied to a corresponding one of said pixels of said display portion through said thin film transistor.

19. (Previously Presented): A liquid crystal display, comprising;
a display section and a display section driving circuit which supplies a driving voltage signal in accordance with a display content, wherein
said display section driving circuit includes a maximum transmittance voltage limiting circuit which limits throughout an entire duration of display, regardless of display content, a maximum transmittance voltage level existing for each of R, G, and B light components that achieves maximum liquid crystal transmittance of said driving voltage signals to a voltage level determined in accordance with a transmittance characteristic of each of R, G, and B light components, and
said driving voltage signal having its maximum transmittance voltage level limited by said voltage limiting circuit is supplied to a corresponding pixel in said display section.

20. (Previously Presented): A liquid crystal display as defined in claim 19, wherein
said display section driving circuit includes a minimum transmittance voltage limiting circuit which limits, regardless of display content, a minimum transmittance voltage level for achieving minimum liquid crystal transmittance of said driving voltage signal to a predetermined voltage level greater than 0V by absolute value.

21. (Previously Presented): A liquid crystal display as defined in claim 19, wherein

among said driving voltage signals for respective R, G, and B light components, at least said maximum transmittance voltage levels determined and limited for R and B light components differ from one another.

22. (Previously Presented): A liquid crystal display as defined in claim 19, wherein

the liquid crystal is of a normally black type which shows a non-transmittance characteristic in a state of no voltage application.

23. (Previously Presented): A liquid crystal display as defined in claim 22, wherein

among said driving voltage signals for respective R, G, and B light components, said maximum transmittance voltage level for B light is limited to a voltage level smaller than said maximum transmittance voltage level for R light by absolute value.

24. (Previously Presented): A liquid crystal display according to claim 1, wherein among said independently set upper limit values for respective R, G, and B light components, at least the upper limit values for R and B light components differ from one another.

25. (Previously Presented): A liquid crystal display according to claim 5, wherein among said independently set upper limit values for respective R, G, and B light components, at least the upper limit values for R and B light components differ from one another.

26. (Previously Presented): A liquid crystal display according to claim 10, wherein among said independently set upper limit values for respective R, G, and B light components, at least the upper limit values for R and B light components differ from one another.

27. (Previously Presented): A liquid crystal display according to claim 11, wherein among said independently set upper limit values for respective R, G, and B light components, at least the upper limit values for R and B light components differ from one another.

28. (Previously Presented): A liquid crystal display according to claim 13, wherein among said independently set upper limit values for respective R, G, and B light components, at least the upper limit values for R and B light components differ from one another.

29. (Previously Presented): A liquid crystal display according to claim 16, wherein among said independently set upper limit values for respective R, G, and B light components, at least the upper limit values for R and B light components differ from one another.

30. (Previously Presented): A liquid crystal display according to claim 18, wherein among said independently set upper limit values for respective R, G, and B light components, at least the upper limit values for R and B light components differ from one another.

31. (New): A voltage-driven birefringence type liquid crystal display having liquid crystal sandwiched between a pair of substrates having electrodes for driving the liquid crystal based on respective R, G, and B signals to control

transmittance of each of the R, G, and B light components for color display, the liquid crystal display comprising:

- a display portion having a plurality of pixels in a matrix form, and
- a driver circuit for said display portion which supplies a driving voltage signal corresponding to display content to a corresponding one of said pixels in said display portion, wherein

- said electrode for driving said liquid crystal provided on a first substrate among said pair of substrates is a pixel electrode of a matrix form which is individually formed for each of said pixels,

- a thin film transistor is connected to a corresponding one of said pixel electrodes,

- said driver circuit for said display portion comprises a maximum transmittance voltage limiter which limits maximum absolute values of levels of non-inverted driving voltage signal and inverted driving voltage signal for determining a maximum transmittance voltage level for achieving a maximum transmittance of liquid crystal of said driving voltage signal which exists for each of R, G, and B to a voltage determined according to a transmittance characteristic of each of R, G, and B, and

- said non-inverted driving voltage signal and said inverted driving voltage signal in which said maximum transmittance voltage levels are limited are periodically switched in a predetermined period and supplied to said pixel through said thin film transistor.

32. (New): A liquid crystal display according to Claim 31, wherein

- said driver circuit for said display portion further comprises a minimum transmittance voltage limiter which limits a minimum transmittance voltage level for achieving a minimum transmittance of liquid crystal of said driving

voltage signal to a predetermined level having an absolute value of greater than 0 V, and

said driving voltage signal in which the voltage level is limited by said maximum transmittance voltage limiter and said minimum transmittance voltage limiter is supplied to a corresponding one of said pixels of said display portion.

33. (New): A liquid crystal display according to Claim 31, wherein
said liquid crystal is of a normally black type in which said liquid crystal is non-transmitting in a state of application of no voltage, and
a rubbingless type vertical orientation film for aligning a major axis direction of molecules of said liquid crystal along a thickness direction of a liquid crystal layer in said state of application of no voltage is provided on a surface of each of said pair of substrates, said surface being a contact surface with the liquid crystal.

34. (New): A liquid crystal display according to Claim 31, wherein
said thin film transistor is a polycrystalline silicon thin film transistor in which polycrystalline silicon is used in an active layer.